



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,981	11/20/2003	Taison Tan	Q175-US1	2730
31815 7590 03/18/2008 MARY ELIZABETH BUSH QUALLION LLC P.O. BOX 923127 SYLMAR, CA 91392-3127				
EXAMINER				
HODGE, ROBERT W				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
03/18/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/718,981

Applicant(s)

TAN ET AL.

Examiner

ROBERT HODGE

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Applicant's arguments with respect to claims 1-47 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "protective layer" as recited in claim 4 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no support in the specification for the recitation of a "protective layer" as recited in claim 4.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 14, 19-23, 26, 29 and 32-47 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,147,739 hereinafter Beard.

Regarding claims 1-10, 14, 19-23, 26 and 29, as seen in figure 1A, Beard teaches a primary battery (abstract) comprising a cathode 11 which does not contain lithium (Examples III-V in Table 1), an anode 12 having two separate layers disposed on the current collector, one layer 14 is a lithium metal active material layer and the other

layer 15 is an intercalating compound which contains lithium (column 4, lines 28 et seq.) as an active material, an electrolyte solution which contains lithium in contact with the cathode and the anode (column 3, lines 47-53), wherein the layer 15 is positioned such that it protects the layer 14 from the electrolytic solution while allowing the electrochemical reaction to take place (column 4, line 53 – column 6, line 20). It is noted that the layer 14 of lithium metal will have a uniform concentration gradient and the layer 15 of intercalating material will have a concentration gradient consistent with a porous material.

Regarding claims 32-47 because the chemistry of the instantly claimed invention has been found it is the Examiner's position that the battery of Beard will exhibit the same and/or substantially similar characteristics to that of the instant claimed invention as outlined in claims 32-47 and therefore Beard reads on the claims as so recited. A reference, which is silent about a claimed invention's features, is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. In re Robertson, 49 USPQ2d 1949 (1999). Therefore the burden is shifted to applicants to provide evidence (not arguments) comparing the prior art invention of Beard to the instant invention.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 12, 13, 15-18, 27, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beard in view of U.S. Pre-Grant Publication No. 2003/0211383 hereinafter Munshi.

Beard as discussed above is incorporated herein.

Beard does not teach that the cathode comprises a fluorinated carbon, or that the electrolyte comprises lithium bis(oxalate) borate.

Munshi teaches a primary lithium battery comprising a lithium or lithium alloy anode such as a lithium-silicon alloy, a cathode comprising a fluorinated carbon (i.e. CF_x) and a non-aqueous electrolyte comprising lithium bis(oxalate)borate (see paragraphs [0014], [0020], [0024], [0025] and [0028]).

At the time of the invention it would have been obvious to one having ordinary skill in the art to use CF_x for the cathode material and lithium bis(oxalate)borate in the electrolyte of Beard as taught by Munshi in order to provide a cathode that has increased kinetic properties and the ability to maintain excellent conductivity during discharge of the battery, which reduces the overall cell resistance and to provide an electrolyte that demonstrates excellent chemical and electrochemical stability when it is in contact with lithium, thus improving the over all performance of the battery.

Claims 11, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beard in view of U.S. Pre-Grant Publication No. 2002/0004169 hereinafter Yamada.

Beard as discussed above is incorporated herein.

Beard does not teach that the intercalating compound contains silicon, or that it includes lithium, silicon and oxygen.

Yamada teaches a non-aqueous electrolyte lithium battery wherein the anode comprises LiSiO as the active material in the intercalating layer of the anode (abstract and paragraphs [0046]-[0048]).

At the time of the invention it would have been obvious to one having ordinary skill in the art to use LiSiO as the active material for the intercalating layer in Beard as taught by Yamada in order to provide a lithium primary battery that has improved discharging characteristics that will prevent deterioration during discharging of the battery thus improving the overall performance of the battery.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-47 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 5, 7, 8, 13-17, 20-22, 24 and 27 of copending Application No. 10/719,276 in view of Beard. The only difference between the present invention and copending Application No. 10/719,276 is the use of two layers of active material in the present invention. Beard teaches a two-layered anode as discussed above, which would be obvious to include in copending Application No. 10/719,276.

This is a provisional obviousness-type double patenting rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. H./
Examiner, Art Unit 1795

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795